



COLORADO SPRINGS,
COLORADO

September 1992



PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.
P.O. BOX 16521
COLORADO SPRINGS, COLORADO 80935



FIRST CLASS MAIL



Ø BEAT



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Board Member	Ron Deutsch NK0P 4305 Ridgeland Dr. 80918	593-8352

* Denotes first year of a two year term.

ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., P.O. Box 16521, Colorado Springs, Colorado 80935. For membership and subscription information see last page of this publication. The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at the Elk's Lodge, 3400 North Nevada Ave. at 7 p.m.

EDITOR: Ron Deutsch NK0P 4305 Ridgeland Drive, Colorado Springs, Colorado 80918 (719) 593-8352.

Deadline for submission of articles or ads is the 21st of each month. Submissions may be sent to the editor or to the club mail box. Permission to reprint articles is granted provided credit is given to both the author and this publication.

ADVERTISING RATES: Full page \$48; half page \$24; quarter page \$12; business card size \$6. These are monthly rates and are billed quarterly. Send your ad requests and payments to: P.O. Box 16521, Colorado Springs, CO 80935.

Prez Sez...

Unlike most years that run from January through December, our Pikes Peak Radio Amateur Association year really runs from October through September. Why? Because during the October meeting is our own version of "changing the guard". In just two more meetings we will need to vote in a new slate of officers and elect new board members.

As I start my article this month, I bring this to your attention because I want to give anyone of you, that would like to take on a club leadership role, a chance to step forward and let it be known. We have been very fortunate that so many good people have given so freely of their time and talents to run the club's activities over the years. However, some of those folks have been actively involved for quite some time and would like to step down and just enjoy being a member.

All offices will need to be filled, as well as four board of directors positions. If this looks like something that appeals to you, please contact any of the current officers or board members and express your desire to do so by the next club meeting.

During our last board meeting (please refer to the minutes) we had a healthy, and I might add lengthy, discussion on the way our club

meetings were going and what our membership was getting out of them.

This discussion was prompted by a number of constructive comments that were made to club officers via telephone calls, letters, or in-person. And I thank those of you who took the time to express your opinions.

As we look forward to planning next year's events, I have asked various members of our board of directors to be prepared to make a brief presentation, in-lieu of a program, at our next meeting on what they believe are ways to strengthen our organization.

We intend to use this as a forum so that we might get input from you, the membership, as to what you would like to see for up-coming programs, events, activities, and format of our monthly meetings. We would like to capture your ideas through a general discussion and by your response to a questionnaire that will be distributed during the meeting.

Please plan to join us at the September meeting, and be prepared to offer your ideas and maybe, just maybe, take on an office for the coming year?

Harv. WB6YXD

VE Testing

A VE's Perspective

[Editors note: I asked Bill Stanfill K4YCD to write a short article about the work he does for the PPRAA as the ARRL liaison for our VE (Volunteer Examiner) team. His article below is the first of what I would like to see become a series by those who contribute their efforts to the club. I hope that seeing a printed description of the tasks performed by our many volunteers will encourage newcomers to volunteer to help in an area of interest to them.]

The VE process is an area of vital interest to the future of amateur radio. All licenses except the Novice are now earned exclusively through the VE program. - NX0EJ

The Volunteer Examiner (VE) Team consists of all the VEs who participate in giving amateur radio tests. The activities that go on before and after the test sessions are handled by two VEs. One is the Team Liaison who works with the ARRL (we are an ARRL certified team); the other is the Team Contact, a high-profile person who is the local contact with the general public, ham and non-ham alike.

As the Team Liaison, I order test materials and associated forms from the ARRL Volunteer Examiner Coordinator (VEC) office. Since we are a "field-stocked" team, I maintain several versions of each exam and usually have enough materials to cover several test sessions. When test day comes, I select two versions of each exam that have not been given recently (at least six months), gather sufficient answer sheets, CSCEs (Certificate of Successful Completion of Examination), Form 610s, etc., and arrive at the test site about one hour early to set up the testing rooms.

We strive to hold testing in two separate rooms, one for those taking code exams and one for written exams only. Each separate testing area requires a minimum of three VEs for the tests to be valid.

During the session, we log-in each examinee on our roster and check credentials and previous exam credit. When all has been verified, the examinee may begin. Each exam must be graded by three different VEs. For those who pass an exam(s), the Form 610 is annotated appropriately and signed by all three VEs, and a CSCE is accomplished for the examinee.

After the test session, we gather up all the test materials (used and unused), and I bring them home where I get the session submission ready for dispatch to the ARRL VEC. For each examinee, I verify that the test grade(s) has been correctly annotated on the roster and that the Form 610 and CSCEs (if any) are correct. I check to make sure the three signatures are also correct.

A test session report is accomplished which provides a summary of the examinees and their collective results, as well as an accounting of the examination fees collected. All of these materials and reports are then packaged and sent via Express Mail to the ARRL VEC.

While the requirement is for the materials to be sent no later than ten days following a VE session, we have sent ours in three days or less, usually the Monday following a Saturday session. For an average session of about 30 people, this submission preparation process usually takes me about two to three hours. Those hours have been worth it since we have not had a glitch in our submissions yet (knock on wood!).

Submitted by Bill Stanfill K4YCD

General Meeting

August 12, 1992

Meeting opened at 7PM by president Harv, WB6YXD. All members and guests introduced themselves.

Minutes of the previous meeting were approved with the following addition: "Mike, K0TER, proposed a copy of the proposed bylaw amendments be made available to the membership at the next meeting to aid in voting on them."

Treasurers report:

Income:	\$496.47
Bills:	\$532.25
Balance:	\$1,140.26

Committee reports:

Publicity

N2IWZ reported he is looking into a display of Ham Radio at the East Library Complex similar to last years "Ham Radio Recognition Day" that was held at the Citidel Mall. No date as yet.

Education

AD0Z reported Novice/Tech classes will be held at the T. J. Maxx Center at 7PM starting on Sept. 14th.

V. E. Testing

NX0E reported the next test session will be at Chapman College on Saturday September 12th. Code at 0900 and written at 1000. Contact Chris, NX0E to pre-register.

RFI

N0NJX Nothing to report.

ARES

K0TER reported the at test is scheduled soon but the date has not been set yet.

PUBLIC SERVICE

K0TER reported letters of thanks were given out to N0QJX, K0ROL, WB0DUM, N0IEM, K4UBU, KE9S, and WA7VVA for their help at the Volksmarch. The American Heart Walk is October 3rd. N4TGO, N0OPH, N0MIX, WA7VVA, WA0MNL, and KB0FNM volunteered to help

RACES

WB0MHP reported an excersize will be held in October. A training session is held on the 3rd Thursday of the month.

CCARC

K0ROL reported the next meeting will be held in Denver and sponsored by the Empire Radio Club. Call Oak for information.

O-Beat

NK0P reported the next two issues will be produced by Chris, NX0E. Please direct and articles to Chris.

OLD BUSINESS

Rosie reminded all of upcoming picnic on August 16th.

WB6YXD reminded all that a chairperson is still needed for next years Swapfest as well as this years Xmas party.

BYLAWS VOTING:

Section 2, Meetings--passed unopposed

Section 7, Cancellation of meeting--passed 2 opposed.

Article 3, Board of Directors--passed 1 opposed.

Article 3, Section 8 added---passed unopposed

Article 12 added Dissolution of Club---Passed unopposed.

NEW BUSINESS

Letter of thanks from the Elk's Club was read for our donation of \$50.00

Hammy award was not available this month.

BREAK at 7:55

RAFFLE: The following won prizes: KB0KLD, N0HJT, W2TJO, N0NJX, K0ROL, KC4KGS, WB9SGD, N0NRA, KF0CT, WB0MHP, N4TGO.

PROGRAM

Dr. Charles Steward, N0PRZ, gave as nice slide presentation on "Electrical Injuries".

The Board meeting this month will be held at the QTH of Ron, NK0P on Tuesday, August 18th at 7PM.

The meeting was adjourned at 9:15PM.

Submitted by Ron, NK0P, acting Secretary.

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From Radio Waves to Dr. Einstein

(Part I)

by Susan K. Smith, KA7NNX

It is known that our Ham Radio communication is carried by means of electromagnetic waves. Hence a radio wave is a special combination of an electric and magnetic field. Our intuition tells us that if a radio wave originates from a point, (say as shown in Figure 1), and we neglect the effects of atmosphere, the waves would spread out in ever growing spheres, with the point sources as the center of these spheres. The speed at which these expand is the same as the speed of light, for it is known that light is also an electromagnetic wave.

In empty space, the speed of light has been measured to be 299,793,077 meters per second or 186,282.386 miles per second. Normally we round these figures off to 300,000,000 meters per second or 186,000 miles per second. A common convention is to denote the speed of light as "c."

We see these explanations of wave propagation in the pages of many ham radio books. We take them for granted and get on to the serious business of applications. Yet, the foundation of radio waves has a rich, international heritage of genius and has restructured our thinking about our universe.

In the 1860's, the Scottish physicist James Clerk Maxwell supplied the mathematical analysis of the interrelationship of electricity and magnetism, which fit the experimental findings of such geniuses as Englishman Michael Faraday (which is the origin of the units "farads"), Frenchman Andre Marie Ampere (origin of the "amp"), and Italian Alessandro Volta (origin of the "volt"). Maxwell's set of four

comprehensive equations, ever since known as "Maxwell's equations," describe the manner in which an electric current invariably produces a magnetic field, and in which a magnet produces an electric current. They also describe how both electric charges and magnetic poles could set up fields consisting of what we picture as lines of force (see Figure 2).

In order for Maxwell's equations to be valid, it is impossible for a changing electric field or a magnetic field to be in isolation. The two fields are always present together, directed at right angles, so that there is a single **electromagnetic** field, as shown in Figure 2. A changing electric field induces a changing magnetic field, which in turn induces a changing electric field, and so on, so the two fields "leap-frog," so to speak. In this manner the field progresses outward in all directions (as shown in Figure 1). The result is electromagnetic radiation, possessing the properties of a wave. In short, Maxwell predicted the existence of electromagnetic waves with frequency equal to that of their source, as shown in Figure 3.

It was even possible for Maxwell to calculate the velocity at which such an electromagnetic wave would have to move. From his equations, he deduced the velocity of the wave was 300,000,000 meters per second, which was equal to the speed of light. Maxwell could not accept that this was a mere coincidence and concluded that light itself must be electromagnetic radiation.

Albert Einstein and Leopold Infeld in their book "The Evolution of Physics," wrote the following - "The theoretical discovery of an electromagnetic wave spreading with the speed of light is one of the greatest achievements in the history of science."

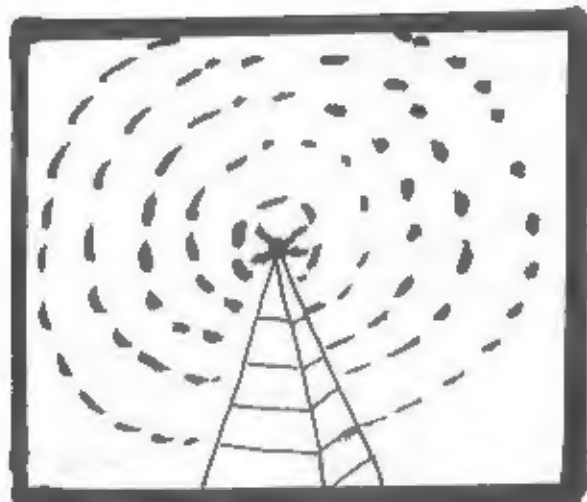


FIGURE 1: Spherical Radio Waves

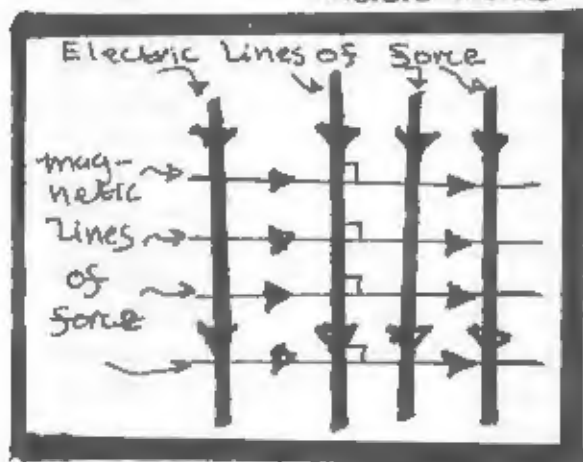


FIGURE 2: Lines of Force

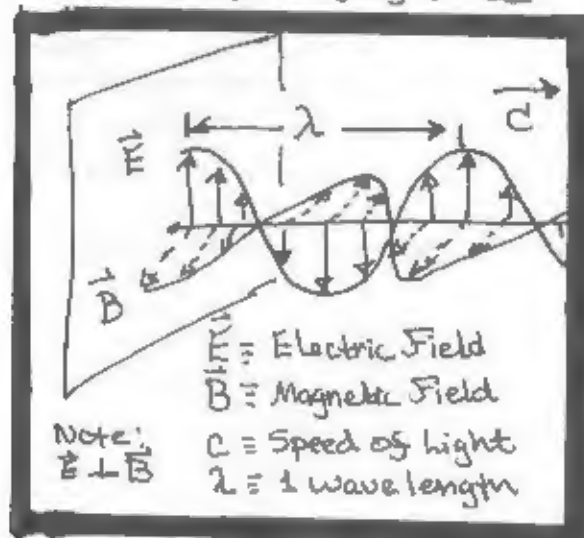


FIGURE 3: One Frequency Electromagnetic Wave

Committee Updates

[Committee Updates is a new column listing club committee contacts and reports of committee activity. I thought that the committee reports portion of club meetings might be shortened if the information were published in Q-Beat, and some time freed for new activities. It is one idea under consideration for changing the format of club meetings. I would appreciate your ideas and feedback during the discussion planned for the September club meeting. Not all committee chairmen had time to submit a report for this issue, so please consider this column as a trial run. - NX0E]

Publicity Al Craig 594-9288

A public demonstration of ham radio is planned for the East Library (ELIC) for October 31. It will last from 10 AM to 4 PM, and will be in the conference room. Al will be contacting club members for assistance.

Membership	Les Borst	634-3995
Education	Al Bailey	597-8514
VE Testing	Chris Smith	495-0624

The next test is scheduled for 12 September at Chapman College. Code tests will begin at 9:00 and written tests will begin at 10:00. Call Chris for more information.

Interference	Bill Petty	591-2116
RACES	Doug Moloney	(unl)
ARES	John Chapman	635-1604
SKYWARN	Steve Westby	570-1070

The summer severe weather season is finally winding down. The El Paso and Teller County areas have had their share of interesting (and destructive) weather this year. I wish to thank all members of SKYWARN, and all the other amateurs that participated, for a job well done. Thank you! Next year we plan to implement what will be called for now a

(continued on page 9)

"The View from the Peak"

by George Hinds, N8CIX

A SUPER COMM-VAN - FREE!

The time: about two years ago. The place: the "Port of Entry" on I-70 at Grand Junction, Colorado. The incident: an eastbound 18-wheeler entering the state rolls in for weighing and inspection.

As inspectors check the paperwork, everything appears to be in order. The truck is traveling as empty. However, suspicion is aroused at the greater-than-expected weight of the apparently empty vehicle on the scales. As the truck rolls out of the Port to the east, personnel call the state patrol with their suspicion that all is not as it seems with the 18-wheeler.

Stopped near Eagle by troopers, a thorough check of the tractor and trailer reveals that the heavier-than-normal weight is caused by a cargo of 4.5 million in drug-money cash concealed in the truck.

With this information, Colorado State Patrol Trooper Jim Scoles introduced members and guests to an evening with the state patrol at a meeting August 19 th in Woodland Park. Jim passed around a photo and fact sheet of what that one drug-related apprehension produced for the patrol: a \$300,000 mobile communications post for CSP at no cost to taxpayers.

Outfitted to provide communications on public safety, government, Red Cross, Amateur Radio, cellular phone and CB, and with all necessary equipment to make it self-contained and self-supporting as a command post for long periods of time, the van is thirty-three feet long and weighs in at 40,000 pounds. To get to an emergency quickly, it can run at all legal highway speeds.

And what an amazing (and enviable) equipment group it contains. For starters, it has 32-channel programmable Motorola radios, antennas for all bands used, heating and air-conditioning units, multi-position

360-degree rotating 9 million candle power flood lights on a hydraulic control 14' mast, electrical generator driven by diesel engine and fuel capacity for five days of operation, capable of supplying 225 amps and 15 kilowatts of power.

Helping to make it self-contained and self-supporting is a refrigerator, microwave oven, hot and cold running water at sink, a 60 gallon fresh water supply, sanitary facilities and a 40' extending antenna mast. While unable to bring the mobile command post to Woodland Park, Jim brought along another piece of patrol equipment: one of several Chevrolet Camaro RS all-white 150 m.p.h. patrol cars appearing from time to time in this area. What an impressive sight! It could easily be responsible for luring teens fascinated with cars into thinking of applying for a position as trooper with the patrol.

Well, if you were one of those who attended the Colorado State Fair in Pueblo recently, it's likely you had the opportunity to see and go through this \$300,000 prize acquired by our state patrol. I hope you did; just hearing about it proved to be intensely interesting.

73, George - N8CIX

FOX Hunting

El Paso County Amateur Radio Direction Finding Group

Congratulations again to Paul W0RW and his XYL Sharon N0OPM, for finding the hidden transmitter conveniently secured in a large facility on Synthes Road in Monument, Colorado.

The Fox consisted of a FT-727R HT running 1/2 A watt on 147.45 MHz and a Kantronics KPC-1 TNC with a beacon packet signal being transmitted every 10 seconds. From the starting point at Memorial Park in Colorado Springs to the hidden Fox location (selected by Mallory

(continued on pg. 9)

FOX Hunting - cont'd.

NØIKF), was approximately 23 miles. The Fox signal at the starting point was very strong, this was due to the excellent transmitting antenna located on top of a huge metal roof. The Fox signal was blasted all over the foothills and surrounding areas.

Paul WØRW and Sharon NØOPM, found the Fox within 57 minutes using a 4 element beam mounted to their vehicle and driving a total of 29.5 miles. Next on the scene after driving 1 hour 18 minutes and 38.3 miles, was Greg WA2OOD and his son Steve. Greg used his state of the art Doppler device to hunt with, however, due to the strong signals bouncing off the foothills, he spent a lot of time in the Garden of the Gods area wasting gas! Eventually with a few hints from Paul WØRW, Greg was able to get on track to find the Fox. Last to arrive on the scene after driving for 2 hours 12 minutes and 56.3 miles was Malcolm KE9S who was also using a 4 element beam. Malcolm spent a lot of time and gas touring Woodmen Road and a few other places!

The next hunt is scheduled for September 19th starting around 10 AM at Rampart High School in Colorado Springs on 147.45 MHz simplex. Sharon NØOPM has volunteered to hide the FOX, so come out and help us hunt it down.

Finally, if you are interested in chasing down hidden transmitters in the Denver area contact Greg Barnett KØELM at 1-303-759-5365 (HOME) or 1-303-649-5460 (WORK). The Denver Transmitter Hunters, hold their FOX hunts on the second Sunday of each month at 5 PM. Talk in frequency to the starting location is on the 145.22(-) repeater.

TNX, 73 & CUL - Doug N4TGO

Committee Updates - Cont'd. from pg 7

"Core Group". This "Core Group" will, in essence, be a quick response team. The group will consist of eight to ten SKYWARN trained radio amateurs that are available 24 hours a day, seven days a week to chase storms, report to the National Weather Service, or work out of the county Office of Emergency Management. This group will be the initial SKYWARN response until the rest of the membership can be alerted. If you are interested in volunteering please contact me, Steve Westby, WB7VHR, at 570-1070.

Public Service Mike Stansberry 636-1290

CCARC Oak Stockton 570-7782

Club Trailer Steve Westby 570-1070

A pair of 5/8 wave two meter whips with NMO type bases have been purchased by the club for the trailer. These will fit the NMO mounts that are already on the trailer. The mounts were generously donated by Jeff, NØJLH.

Newsletter Ron Deutsch 593-8352

September and October Ø-Beat are being edited by Chris, NXØE. For submissions, articles, ads, etc. call him at 495-0624. Assistant editors, reporters, and ad agents are needed!

Club Historian Al Craig 594-9288

Club History night is being planned for the October meeting.

Next PPRAA Meeting

September 9th, 7:00 PM

Elke Club, 3400 N. Nevada Ave.

Board Meeting **August 18, 1992**

The meeting was called to order at 1900 at the QTH of Ron, NKØP and Liz, NØTUK. Present were: Harv, WB6YXD; Ken, NØNKP; Bill, NØNJX; Russ, KBØFNM; Rosie, WAØMNL; Luci, NØOUD; Chris, NXØE; Matt, KC4KGS; Al, N2IWZ; Ron, NKØP; Liz, NØTUK.

Chris, NXØE will be doing the newsletter for the September and October issues. The deadline for articles is still the 21st of the month.

The Christmas Party will not be held at the Flying W because of cost. (at least \$17.00 per person). Several alternatives were discussed. The Board decided on a "Christmas Gathering" instead of a dinner. Harv, WB6YXD will check into getting an organist to play Christmas music. Rosie will also look into entertainment. Volunteers will be needed to assist with organization and set-up.

Al, NØCMW has resigned as secretary effective after the October elections.

Elections will be held at the October General Meeting. Names of nominees for club officers or board members may be given to any Officer or Board member. Ron, NKØP is seeking assistant newsletter editors.

The "Old Timers" Program, originally scheduled for September will be postponed until October because of the absence of key people. The September General Meeting will be focused on reviewing Club goals and objectives. Harv, WB6YXD will develop a questionnaire for the meeting and will write an article describing the specific goals and objectives of the meeting.

Harv, WB6YXD read a letter written to the President. He will discuss the ideas

presented in this letter at the September General Meeting.

The By Laws, including the recently-approved changes will be published in total in Ø Beat.

Rosie, WAØMNL is investigating prices for Club patches.

The next Board meeting will be on August 20, 1992 at the QTH of Harv, WB6YXD at 14:30. There will be a barbecue after the meeting.

The meeting adjourned at 20:15.

Submitted by Liz, NØTUK (Substituting for Al, NØCMW)

Operating Events

September

12

North American Sprint, phone, 0000Z to 0400Z 13 Sept. Details in August QST.

12 - 14

ARRL September VHF QSO Party, see August QST, page 90. The ARRL has a new incentive for this one. Earn a hat pin by working 25 other stations during the contest. Try out your new two meter rig and see who you can work on simplex!!

27 - 28

Fall Classic Radio Exchange 2000Z, 27 Sept. to 0400Z, 28 Sept. Put your old gear (over 10 years old) on the air to see who you can work. Lots of fun. Details in the Contest Corral of Sept. QST.

October

17 - 18

35th Boy Scout Jamboree on-the-Air. Runs from 0000Z, 17 Oct. to 2400Z, 18 Oct. See article in September QST. This is an excellent opportunity to introduce Ham Radio to Boy Scout groups all over the world.

24 - 25

CQ World-Wide DX Contest, phone. Details later.

Submitted by Rick Brown - KDØSU

Dits and Bits

For Sale

Ham III rotor with control box and cable, TH3 triband beam, (10-15-20, tuned for SSB band), \$150 for all, Jerry 597-2120 WAØWSY.

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1990 US. and International Callbooks - \$7.50 each or \$12 for both.

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Azden PCS 6000H 50 watt 2-meter transceiver - \$275.

Radio Shack VHF/UHF TV antenna like new - \$30.

Call Ron, NKØP 593-8352.

Notice

To All Guys and Gals: You are invited to a Pot Luck Luncheon, on September 16th at 11:30 AM. It's at 616 N. 31st ... QTH of KBØFNM, Russ and WAØMNL, Rosie. Russ will fire up the grill, so bring meat to grill (for yourself). Please bring a potluck dish to share. Table service and beverages will be furnished. In order to coordinate a menu and so we have a count of attendance please call either Rosie (471-9965) or Connie KAØPXE (634-1081).

Notice

The PPRAA sponsored Amateur Radio classes will be held at the TJ Maxx Center at Rustic Hills (at the west entrance to the mall). The first class begins at 7 PM, September 14th. Classes continue each Monday and Thursday evening.

Classes will cover the Novice and Technician license. There is no charge for the classes. For further information, call the club's education committee chairman, Allen Bailey ADØZ at 597-8514.

For Sale

Bought new HF rig so the following is For Sale HF Equipment:

Heathkit HW-101, 80-10 Meters, SSB/CW, Matching Speaker, PS, Opt. Digital Display, 180 Watts - \$275.

Heathkit SB-104 80-10 Meters, SSB/CW Digital Broadband. Includes Microphone, 100 Watts - \$350.

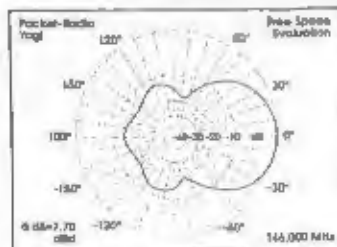
Radio Shack HTX-100 10 Meter SSB/CW 5 to 25 Watts 10 meter mag-mount - \$150.

Call Steve Westby, WB7VHR 570-1070

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